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Article

Digital Literacies or Digital Competence: Conceptualizations in Nordic Curricula

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Abstract
This article examines how the concepts of digital literacies and digital competence are conceptualized in curricula for compulsory education within the Nordic countries. In 2006, the European Union defined digital competence as one of eight key competences for lifelong learning. The terms digital literacies and digital competence have since been used interchangeably, particularly in policy documents concerning education and the digitalization of educational systems and teaching. However, whether these concepts carry similar meanings, and are understood in a similar way, across languages and cultures is not self-evident. By taking the curricula in Sweden, Denmark, Finland, and Norway as examples, this article attempts to clarify similarities and differences in how the concepts are interpreted, as well as what implications this has for the digitalization of education. The analyses reveal that different terms are used in the curricula in the different countries, which are connected to themes or interdisciplinary issues to be incorporated into school subjects. The conceptualizations of the terms share a common emphasis on societal issues and a critical approach, highlighting a particular Nordic interpretation of digital literacies and digital competence.

Keywords
bildung; curricula; digital competence; digital literacies; education; literacy

Issue
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1. Introduction

Questions of how compulsory education can prepare students for citizenship in a digitalized society are currently on the agenda in many countries around the world, for example concerning whether programming should be included in curricula and how to teach students to critically evaluate information and sources in digital environments.

As pointed out by UNESCO (Broadband Commission, 2017), definitions and terms such as digital skills, competencies, knowledge, understandings, and thinking are used interchangeably since there is not a set of agreed terms to describe the abilities needed in a digitalized societies. In the Digital Education Action Plan (European Commission, 2018), for example, no distinction is made between digital skills and competences. The concepts digital literacy and digital competence are in focus in this article since they are concepts that are used in public discourse and in research and they are also present, more or less explicitly, in education policy documents, such as curricula.

Spante, Hashemi, Lundin and Algers (2018) have in a systematic review outlined how the concepts of digital literacy and competence are used in higher education research and policy documents. They came to the conclusion that digital literacy has been used over a longer period of time and more frequently, particularly in research. However, definitions in policy documents, where digital competence is more frequently used, tend to gain legitimacy. Lea (2013) argues that literacy’s original connections to practices of reading and writing, tend to be

overlooked by competence-based agendas with an increased focus on a set of transferable skills and competences that can be used in educational contexts, as well as in digital societies in general. According to Spante et al. (2018), digital competence is used in politically underpinned publications and tends to concern the professional use of technology in different contexts. They also discern a geographical difference where digital literacy is mainly used in English speaking countries whereas digital competence is used in European countries such as Spain, Italy and the Nordic countries.

Concepts like digital literacies and digital competence are used globally but whether these terms carry the same meaning across languages and cultures or if they are understood in a similar way is another matter. By taking the Nordic curricula as examples, this article attempts to clarify similarities and differences in how the terms are conceptualized and used in Sweden, Denmark, Finland, and Norway. Since the Nordic countries are close geographically, and to some extent also culturally, differences between these countries may indicate where understandings of the terms tend to diverge also in a broader global context, while similarities found may point out what is significant in the Nordic interpretation of the concepts.

1.1. Literacy and Digital Literacies

In educational contexts, literacy is sometimes used as synonymous to central terms, such as knowledge and learning (Säljö, 2012). However, in research on language and language development, the term literacy derives from the ability to read and write. Reading and writing have always been central and essential in education. While, literacy in educational contexts previously mainly referred to the ability to decipher, copy, and memorize print-based typographical texts, it nowadays involves being able to understand and draw conclusions from a number of resources (cf., Resnick, 1987; Säljö, 2010). Moreover, there has been a shift from reproducing what is already known to producing something new and relevant, which means that production and performance have become increasingly important in literacy practices (Säljö, 2010).

Street (1995) argued for the need for an ideological model of literacy, where literacy is understood as social practices, to shift away from the autonomous model which regards literacy as a technical skill to master. From the perspective of Street's approach, focused on the practices of reading and writing, literacy cannot be regarded as neutral but is always situated and affected by, for example, social, cultural, and historical aspects of the practices in which it occurs. Concepts containing literacy, such as digital literacy, tend to contain an inherent tension between the two models identified by Street (1995). In this way, conceptualizations of different literacies can be placed on a continuum from descriptions of technical skills at one end, to descriptions of social practices at the other. When viewed as a technical skill, digital literacy, for example, tends to focus on skills such as being able to handle the digital devices when communicating online. Regarding literacy as a social practice, the interest instead is on, for example, how online environments affect the way individuals communicate and the social norms that emerge on online arenas. Based on issues of diversity, both when it comes to ways of expressing meaning and in relation to multicultural societies, literacy is nowadays often used in the plural, literacies. The need for an expansion of the notion of literacy has been argued for based on different premises, and notions of what is "new" vary, as well as the changes which are said to be needed in education. Common to the different arguments for expanding the notion of literacy and what it means to be able to read and write, is that they focus on how meaning is made in a diverse and rapidly changing society. In the late 20th century, an expansion of the concept of literacy was largely argued for based on a perception of literacy as social practice (e.g. Barton & Hamilton, 1998; Scribner & Cole, 1981; Street, 1998). Street's (1998) notion of an ideological model of literacy draws attention to the situatedness of literacy and how the social setting effects what it means to be able to read and write. The need to pay greater attention to vernacular literacies in educational settings is stressed and the "new", in this case, mainly refers to how we understand and describe literacy.

The New London Group (1996) argued for socially responsible curricula and an expansion of literacy based on the increased multiplicity in contemporary societies due to globalization, increased mobility, and the multiplicity of communication channels. "New" in this perspective relates to global societal changes that have implications for education and put new demands on the formulation of curricula. The need to refer to literacies, or multiliteracies, rather than the singular form was made based on issues of diversity. Diversity here refers both to populations from increasingly diverse backgrounds and to the increased diversity in communication channels where texts combining verbal language, images, and sound are common.

From a multimodal perspective, verbal language is one of numerous ways of expressing meaning and therefore, in educational settings, it needs to be recognized and greater attention be given to the fact that there are other ways of expressing meaning, such as images, sound, and movement (Bezemer & Kress, 2016; Johnson & Kress, 2003). Kress (2010) argues that the relationship between modes is changing since images and sound are becoming increasingly important in screen-based communication. What is "new" in this perspective is the recognition and evaluation of alternative modes other than the verbal and their increased importance in a changing communication landscape.

When the concept of digital literacies emerged around the turn of the century it was related to 'new' technology at that time, such as the internet. The dig-

ital literacies suggested by Gilster (1997) differed from earlier conceptions of literacies in that mastering the digital technology was highlighted, whilst aspects relating to understanding and making meaning were downplayed. Focusing on practices that involved the use of digital technology, Lankshear and Knobel (2008) argued for an expansion of literacies since digital technologies facilitated new ways of creating, receiving and sharing texts. "New" in this perspective referred to a new mindset that involved both new technology and new "Ethos stuff". Comparing new and conventional literacies, the "Ethos stuff" connected to new literacies meant that they were more collaborative, participatory and distributed, whereas conventional literacies were more published and author-centric (Lankshear & Knobel, 2008).

Media literacy is sometimes considered to be part of, or equivalent to, digital literacy (Erstad & Amdam, 2013). However, Sefton-Green, Nixon and Erstad (2009) write about the different focus in media and technology education in the 1990s in Norway. Media education focused on learning about the media, not learning *through it*. Technology education mainly concerned teaching students how to use computer hardware and software. These differences meant that media education was mainly done in the social sciences by teachers with a background in the humanities, while technology education was carried out by teachers with a natural sciences background. According to Sefton-Green et al. (2009), this split has prevailed and been manifested in conceptualizations of digital literacy as well as in policy and educational practices.

Curricula in the Nordic countries, as well as research on classroom practices, are compared by Elf, Gilje, Olin-Scheller and Slotte (2018) with a focus on multimodality. They come to the conclusion that multimodal teaching is connected to the use of digital technology and that multimodality as a concept is discernible in mother tongue subjects (L1-subjects) in all four countries; i.e. Swedish, Danish, Finnish, and Norwegian, but there are differences in how multimodality is conceptualized. Moreover, they see a change in all four settings, moving from reception to production in the goals to be achieved by the students. Whereas receptive analyses, of for example the multimodality of advertisements or films, have been present in the curricula previously, goals have now been added aiming at the production of multimodal texts. In order to assess the multimodal productions that students are expected to create, qualitative aspects of multimodal productions need to be formulated in, for example, grading criteria. Elf et al. (2018) describe this as a historically new situation in the Nordic context.

Recently there has been an increased interest in how to develop critical digital literacies and Pangrazio (2017) outline three understandings of critical digital literacies; a critical literacy approach, a critical media literacy approach, and a digital design approach. Pangrazio also points out that critical digital literacy appears to have become positioned as an either/or position; "where critique of the digital context is focused on either critical consumption or creative production; and builds either the technical skills of design or the more general, theoretical skills of critique" (p. 168). Pangrazio argues for the need to consider critical digital literacies in a broader sense where social, political, economic, and technical issues are considered. An understanding of how power symmetries are created in digital environments could be developed by examining how inequalities are reinforced by digital technologies and how they could be challenged by focusing on the role that questioning and challenging have in shaping and re-configuring techno-social systems. This conceptualization of digital literacies, as social practices affected by broader societal issues, echoes the arguments brought forward by Street (1995) in the ideological model of literacy.

Literacy is not a concept that is easily translated into the Nordic languages. *Litteracitet* is in Sweden sometimes used as a direct translation of the English word but often the English term is retained instead. Similarly, competence is often used as a term (*kompetens* in Swedish, *kompetanse* in Norwegian and Danish[1]) but sometimes other words are used that could also be translated as basic skills. This means that different terms are used in the different national curricula. Krumsvik (2008) states that Norway, in 2006, was the first country in the world to introduce digital competence, as a basic skill in line with reading and writing, in their national curriculum. However, the term competence is not used but rather what may also be translated as basic skills (*grunnleggende færdigheter*).

1.2. Digital Competence

The concepts of competence and competency have mainly been discussed in the literature on management strategies and have sometimes been used interchangeably. While Le Deist and Winterton (2005) describe competence as a "fuzzy concept" because of the difficulties in arriving at a definition which can accommodate the different ways that the term has been used. Nevertheless, they outline the difference between competence and competency; although the usage is inconsistent, competence predominantly refers to functionality and being able to function within an organisation effectively, whereas competency refers to behavioural areas. In research and policy on education, the term competence is the one that is predominantly used.

In 2006, Digital competence was included in the framework of key competences for all citizens by the European Union (EU) commission (European Parliament, 2006). Eight key competences were outlined as necessary for personal fulfilment, active citizenship, social cohesion, and employability. The EU framework should form a basis for further learning and the ability to develop and update the key competences throughout life. Ala-Mutka, Punie and Redecker (2008) state that EUs

[1] Since Finland has two official languages, Finnish and Swedish, the Finnish documents have been read in Swedish.

definition of digital competence: "involves the confident and critical use of ICT for employment, learning, self-development, and participation in society" (p. 4). Moreover, the definition includes the knowledge, skills, and attitudes needed to work, live, and learn in the knowledge society. However, Søby (2008) argues that the meaning of the concept of digital competence is highly negotiable and in need of interpretation in actual educational practice. It is not simply details of what specific skills are to be taught in schools which are at stake in such negotiations and interpretations; on a deeper level, there is also the question of what knowledge and competences the citizens of tomorrow will need and are entitled to. Hope and expectations to deal with a number of complex questions are being placed on schools and a vision of technological developments as the solution to these complex questions are prominent. However, Selwyn (2013, 2016) explicate that while technology may provide new or different possibilities, they also bring about new questions and problematic issues and tend to reproduce grounds for discrimination, e.g. gender, ethnicity, religion, sexual orientation, and disability.

In policy documents from UNESCO (Broadband Commission, 2017) and the EU (Carretero, S., Vuorikari, R., & Punie, Y, 2017) a combination of a technical and a practice-oriented view can be discerned. UNESCO outlines three levels of digital competence; functional skills, generic skills, and higher level skills. The functional skills include a basic understanding of how technology works as well as access to technology, whereas the higher level skills relate to specialist competences required for ICT professionals, such as programming skills, critical thinking, and innovation. The generic skills at the intermediate level, are often the ones in focus in national policies as well as in the EU's Digital Competence Framework for Citizens (Carretero et al., 2017) and the OECD's Framework for Digital Skills (OECD, 2016). DigComp2.1 (Carretero et al., 2017) consist of five competence areas, each with seven proficiency levels, which together create a complex structure of what digital competence contains and how different levels can be measured.

Krumsvik (2008) writes that the concept of digital competence in the Nordic countries is interpreted and used referring to the German term *bildung* (*bildning*—in Swedish, *dannelse*—in Norwegian and Danish). Gustavsson (2009) explains *bildung* as a personal relationship to knowledge and understanding of oneself as well as the world. Global questions connected to citizenship and human rights and the development of humanity are important aspects of *bildung* (Biesta, 2002). According to Krumsvik, digital bildung concerns the effect that digitalization has on society and includes identity development and how individuals partake in different communities online. The need to develop critical abilities and being able to evaluate digital sources, as well as being aware of ethical and moral issues connected to the use of technology is a part of digital *bildung*.

2. Comparing Curricula: Methodology and Methodological Considerations

General parts of the curricula in all four countries have been studied (Skolverket, 2017a; Undervisningsministeriet [UVM], 2018a; Utbildningsstyrelsen, 2014; Utdanningsdirektoratet, 2018), as well as documents that specifically aim to conceptualize digital competence, or the equivalent concepts used (Skolverket, 2017b; Utdanningsdirektoratet, 2017; UVM, 2018b). No such documents were found in connection to the Finnish curriculum, but this curriculum is, on the other hand, a more extensive document which includes conceptualizations of the terms used. Since the Norwegian curriculum has included conceptualizations of digital competence for several years, an earlier version of the framework for basic skills (Utdanningsdirektoratet, 2012) has also been analysed in order to compare it to the more recent one.

Rather than searching for specific terms, the documents were read in order to identify which concepts were used and how they were conceptualized. The findings were compared across curricula and analyzed in relation to earlier research on digital literacy and digital competence.

Elf et al. (2018) discuss methodological questions in relation to the analysis and comparison of curricula in different countries, which strongly relate to methodological issues in this article. Similar to Elf et al. (2018), difficulties were found when reading and analyzing the curricula since they are written and structured in different ways. Another difficulty was finding and choosing which documents to read and analyze. An overview of the documents that were reviewed as well as the concepts used in the different countries are presented in Table 1.

Since the author is most familiar with the Swedish curriculum and educational system, the analysis of the Swedish curricula is of deeper scope in the sense that the analysis was made on both the general level and at the subject level. The analysis of the Danish, Finnish, and Norwegian curricula focus on the general part of the curricula which outlines interdisciplinary aspects, whereas the analysis of the Swedish curricula aims to give a more comprehensive view of the conceptualization of digital competence also in connection to subject syllabi. The decision to focus on the general part of the curricula in all countries was made based on the scope of this article but further analysis of, for example, syllabi for different subjects could be a possible way to further the analysis.

3. Nordic Curricula

Curricula in the Nordic countries have all undergone recent changes and revisions, partially due to issues of digitalization of society and education. In the following section, how digital literacy and competence are referred to in the curricula in the four Nordic countries, Denmark, Finland, Norway and Sweden, are outlined. Curricula for compulsory education in all four countries, i.e. primary

Table 1. An overview of the concepts used and the reviewed documents.

Country	Concepts used	Status in the curricula	Reviewed documents
Denmark	IT and Media	One of three interdisciplinary fields	Common goals in Danish curriculum (UVM, 2018a) Guidance to IT and Media (UVM, 2018b)
Finland	Multiliteracies and Digital competence	Two of seven multifaceted competences	Finnish curriculum for compulsory education (Utbildningsstyrelsen, 2014)
Norway	Digital skills (*ferdigheter*)	One of five basic skills	Overall part of the curriculum (Utdanningsdirektoratet, 2018) Framework for basic skills (Utdanningsdirektoratet, 2012, 2017)
Sweden	Digital competence	Incorporated into overall goals and syllabus for some subjects	Swedish curricula for compulsory education (Skolverket, 2017a) Commentaries to revisions of curricula and digital competence (Skolverket, 2017b)

and lower-secondary school, have been analyzed. First, a more in-depth analysis of the Swedish curricula is made, followed by an outline of how digital competence is conceptualized in the general part of the curricula in the other Nordic countries.

3.1. Sweden

The current Swedish curricula came into effect in 2011 but have been revised several times since. Following a national strategy for the digitalization of education, revisions were made in 2017 to strengthen students' digital competence as well as the links between different subjects (Skolverket, 2017a).

The Swedish curricula consist of two introductory chapters outlining fundamental values and tasks, as well as overall goals and guidelines for all grades and subjects. Revisions were made in these chapters as well as in the aims and core content of Swedish, Swedish as a second language, Social science, Physical education, Natural Science, Technology, Mathematics, and Crafts[2]. Though the revisions intend to strengthen students' digital competence, no alterations to the knowledge requirements in the subject syllabi were made. This implies that the digital competence of the students is not part of assessment and therefore cannot be referred to as a standard to obtain but rather a skill to use in order to acquire the knowledge required.

The Swedish National Agency for Education has published commentaries on the revisions to further explain to teachers what is meant by the curricula's revisions (Skolverket, 2017b). In the commentary, they outline four aspects of digital competence; to understand the effects of digitalization on society, to be able to use and understand digital tools and media, to have a critical and responsible approach, and to be able to solve problems and convert ideas into action. These aspects are clearly mirrored in the following paragraph which has been added to the first chapter of the curricula:

> The school should contribute to the students developing an understanding of how digitalization affects the individual and society's development. All students should be given the opportunity to develop their ability to use digital technology. They should also be given the opportunity to develop a critical and responsible approach to digital technology, in order to see opportunities and understand risks as well as to evaluate information. The education will thus help students develop *digital competence*. (Skolverket, 2017a, p. 9)

Earlier on the same page, the effects of digitalization on the individual and the society are stressed in the following sentences (revisions in bold):

> The students should be able to orient themselves **and act** in a complex reality with an extensive flow of information, **increased digitalization** and a fast pace of change. (Skolverket, 2017a, p. 9)

The ability of students to act in a complex reality and to critically review information has been added and the role that digitalization is seen to have is also stressed.

Revisions in the first two chapters mainly outline the societal effects of digitalization. The responsibility of teachers and headmasters to make sure that all students have the opportunity to develop an understanding of ethical and moral issues is also stressed. In chapter two, the responsibility of the school, the headmaster and the teachers are outlined. The school is responsible for the students having certain knowledge and being able to do certain things once they complete their compulsory education. Adjustments have been made to one of these responsibilities (revisions in bold):

[2] The Craft subject in Sweden is divided into two: Needlework and Woodwork, and at primary level (up to year 6) all students have lessons in both craft subjects. At the lower secondary level, the students chose one of the subjects.

> (The student…) is able to use **both digital tools and media and other tools** when searching for knowledge, **processing information, solving problems**, creating, communicating and learning (Skolverket, 2017a, p. 13)

The expression "both digital tools and media and other tools" as well as "both with and without digital tools" is a common addition that was made in the revisions throughout curricula. In earlier versions of the curriculum, it instead referred to "modern technology". Being able to handle the flow of information and using tools for problem-solving was added to indicate what the student should be able to do with the tools, whether digital or not.

When it comes to revisions in the different subjects, changes relating to the aspects outlined by the National Agency for Education (Skolverket, 2017a) have been made to a different extent in the different subjects. Revisions aiming to develop students' understanding of how digitalization affects society as well as developing a critical and responsible approach were mainly made within the subject of Social Science. In Civics, for example, the following sentence has been added in the subject's aim:

> Students should be given the opportunity to understand the significance of digitalization for societal development and for personal integrity. (Skolverket, 2017a, p. 218)

In the subject of Swedish and Swedish as a second language, the students' ability to act responsibly in online environments have also been added as part of the core content with additions such as:

> Acting responsibly when communicating in digital and other media and in different contexts. (Skolverket, 2017a, p. 255)

Problem-solving is mainly addressed in the subjects of Mathematics and Technology, often in connection to additional core content about programming. However, aspects relating to the ability to convert ideas into action are also stressed by the revisions in Social Science, Swedish, and Swedish as a second language, with additions stating that students should act in certain ways, often responsibly and ethically.

To be able to use and understand digital tools and media is the aspect that is most prominent in the revisions and permeates changes in all subjects. In an analysis of the revisions made in the syllabus of the different subjects, 72% or the revisions could be classified as concerning the use of digital tools (Godhe, Magnusson, & Sofkova Hashemi, 2019). This points to a view of digitalization as primarily a matter of using digital tools extensively and increasingly, which could be seen as mirroring what Street (1995) described as an autonomous model of literacy, where literacy is regarded as a technical skill, rather than a social practice. However, about 13% of the revisions (Godhe el al., 2019) concern societal aspects and the development of a critical and responsible approach such as shown in the excerpt above from the subject of Civics. In line with what Krumsvik (2008) pointed out, this, as well as a focus on students ability to take action in society (second and fifth quote above), could be regarded as a distinct interpretation of digital competence that incorporates aspects of digital bildung by emphasizing societal aspects and a critical approach to the digitalization of society and education.

3.2. Denmark

In the Danish curriculum, IT and Media is the term used rather than digital competence. IT and Media is one of three interdisciplinary themes outlined in the Danish curricula (UVM, 2018a, 2018b). The other two themes are Innovation and entrepreneurship, and Language development. The word competence is used in the learning outcomes (*kompetencemål*) which are specified for each subject (UVM, 2018a) but not for the interdisciplinary themes. The interdisciplinary themes are supposed to be integrated into teaching and they are also incorporated into each subject.

In the guidelines for the IT and Media theme, IT is defined as information technology for collecting, processing, storing, and spreading information while Media is defined as digital media, meaning digitally based methods and environments for information, communication, learning, and entertainment (UVM, 2018b). In an educational perspective, the theme focuses on both technology and communication. IT and Media competence is regarded as essential to be able to actively take part in a mediatized and digitalized society since citizens need to be able to use and understand IT and Media's influence on society in order to reflect on both their own use of social media and how individual and common goals can be achieved through media.

IT and Media competence concern the ability to communicate through different media, find and share information digitally, create content and participate in social processes through IT and Media. Multimodal productions are said to create opportunities for student learning, but for this to happen students need to have the competence to use multimodal resources.

Four possible roles for students to take when working with IT and Media in different subjects are outlined. Students can be; critical investigators, analytical receivers, creative producers, or responsible participants (UVM, 2018b). These roles are regarded as fluid and are developed throughout the learning process so that students' positions may vary and expand during the process. As a critical investigator, the students' ability to find, organize, choose and critically examine information is in focus. The students' ability to analyze the message and the senders' intention is central when the student is being an analyt-

ical receiver. The ability to analyze multimodal compositions is highlighted here as well as in the third role as a creative producer. To be a creative producer the student needs to be competent in creating digital productions where digital tools are used creatively and where the message, and which modes to use, is adapted to the receiver. The fourth role, responsible participant, concerns communicative competences such as online cooperation and knowledge sharing. The student needs to take ethical aspects into consideration as well as the copyright of digital material. In the description of these roles, examples are also given in relation to the learning outcomes (*kompetencemål*) in different subjects.

The focus in the Danish curriculum is to a large extent on communication where the ability to use technology is seen as a prerequisite. What is emphasized is the students' ability to participate actively, creatively, and responsibly, both as a consumer and a producer, in digital communication. Digitalization is to a large extent conceptualized along the lines of Streets ideological model of literacy where how to engage in different social practices is in focus. In a sense, the use of the term IT and Media allows for two slightly different conceptualizations where IT mainly concerns the use of tools while Media relates to communication and broader issues connected to society and digital bildung.

3.3. Finland

In the Finnish curriculum, which came into effect in 2016, seven multifaceted competences are seen as complementary to traditional school subjects (Utbildningsstyrelsen, 2014). The need for these multifaceted competences results from global changes which mean that in order to be an active citizen, broad competences are needed which go beyond and bridge scientific subjects (p. 18). These competences should permeate all subjects and aim to develop the students understanding of themselves, their strengths as well as ways to develop and self-evaluate. Two of these competences are Digital Competence and Multiliteracies (*multilitteracitet*). As mentioned earlier, the concept of multiliteracies derives from the New London Group (1996) and stresses the importance of both linguistic and cultural diversity.

In the Finnish curriculum, Multiliteracies broadens the notion of what a text is to include verbal, visual, auditive, numerical, and kinetic sign systems, which closely relates to the socio-semiotic view on languages and research argued for by for example Kress (2010) and Jewitt (2006). To have Multiliteracy competence involves being able to search, combine, redesign, produce, present, and critically evaluate information in different forms and contexts, using a variety of tools (Utbildningsstyrelsen, 2014, p. 21). Moreover, it involves developing critical thinking and learning how to learn. Reading incorporates both traditional reading environments as well as multimedia ones, where digital tools are used in several ways. Multimodal teaching materials have to be used and the students should be given the possibility to understand cultural associations between the texts.

Digital competence is regarded as both a tool for learning and the object of learning. The description of digital competence focuses on digital tools and the principals of how to use the digital tools and how they work, as well as how pupils should develop their practical digital competence when creating their own products. Moreover, the pupils should be given guidance on how to use the tools responsibly, ergonomically, and safely, with pupils being taught how to use the tools creatively and for carrying out investigations as well as when communicating and creating networks. Digital Competence is considered to be important for citizens, both in its own right and as part of Multiliteracies (Utbildningsstyrelsen, 2014, p. 21). Even though Multiliteracies and Digital Competence are two separate competences in the Finnish curriculum, Digital Competence is simultaneously written about as being a part of Multiliteracies since it is conceptualized as concerning the use of digital tools while the focus in Multiliteracies is on broadening the notion of what a text is, students' ability to search for and evaluate text, and the development of critical thinking.

Going back to Street's (1995) definition of two models for literacy, the two competences, Multiliteracies and Digital Competence, both incorporate and divide the two models since Digital Competence is conceptualized as mainly being a technical skill, i.e. the autonomous model, whereas Multiliteracies concerns literacy as a social practice. The relation between the competences is slightly ambiguous since Digital Competence is a competence in its own right but also said to be part of multiliteracies. This indicates that digitalization as a technical skill forms a part of social practices and hence is subordinate. Relating to the concept of Multiliteracies, as used in the curricula and by the New London Group (1996), diversity in the Finnish curriculum mainly concerns diversity in language and texts, whereas cultural diversity and multiplicity are only briefly mentioned. Moreover, the term is written in the singular in the Finnish curriculum (*multilitteracitet*), thereby losing its original double plural form.

3.4. Norway

In the Norwegian curriculum (Utdanningsdirektoratet, 2017, 2018) five basic skills (*ferdigheter*) are outlined; digital skills, verbal skills, being able to read, count, and write. These basic skills are incorporated into the competence goals defined for each subject and are also seen as necessary tools for learning and development and a pre-requisite for students to be able to show their competence. The word competence is used in connection to the different subjects and the goals for students to reach (*kompetansemål*). Competence is defined as:

> The ability to acquire and use knowledge and skills to master challenges and solve assignments in known and unknown contexts and situations. Competence

> implies understanding and the ability to reflect and think critically. (Utdanningsdirektoratet, 2018, p. 11)

Even though the word *bildung* is not used, the definition of competence in the Norwegian curricula focuses on critical abilities commonly associated with *bildung*.

In the description of digital skills as a basic skill (Utdanningsdirektoratet, 2017, p. 3), digital skills are conceptualized as being the ability to acquire and process information, creatively using digital resources and to communicate and interact with others in digital environments. Moreover, it involves being able to appropriately and sensibly use digital resources and develop digital judgement through knowledge and strategies for internet use. Furthermore, digital skills are an important skill for learning and actively partaking in an ever-changing society and working life. The digital development is in the description said to have changed the premises for reading, writing, counting, and verbal expressions, thereby changing the learning processes and working methods but also raising the demands for sound judgement (Utdanningsdirektoratet, 2017, p. 3).

Within the basic digital skills, five skill areas are outlined; using and understanding, finding and managing, producing and processing, communicating and interacting, and the exercise of digital judgement (Utdanningsdirektoratet, 2017, pp. 3–4). Using and understanding concern digital resources and how to navigate in and outside of networks, safeguarding information and data. Finding and managing focuses on the ability to interpret and evaluate information, being critical and referring to sources. Information may consist of texts, sound, images, videos, symbols, and data. Producing and processing creatively using digital resources involves creating new digital products and developing or reusing existing ones. Digital interaction entails using digital resources for planning, organizing, and performing learning activities together with others through sharing and co-writing. Exercising digital judgement means following rules to protect one's privacy and being considerate to others' online. This can be done by using strategies to avoid unwanted situations and also by critically reflecting on one's own ethics and values online and in social media. Five different levels are outlined for each skill area but from this framework document (Utdanningsdirektoratet, 2017) it is not clear how they connect to different subject and learning outcomes (*kompetansemål*).

Comparing the earlier framework for digital skills (Utdanningsdirektoratet, 2012) with the current one, in the previous version there is an emphasis on using digital tools, media and resources, while the focus in the later version has shifted towards evaluating digital sources and critically engaging in digital environments (Utdanningsdirektoratet, 2017). For example, in the early version, digital tools, media, and resources should be used to search for, navigate, categorize, and interpret digital information appropriately and critically. In the newer version, the same competence area is described as being able to process, interpret, and evaluate information from digital sources.

The conceptualization of digital skills in the Norwegian curriculum resembles how digital competence is conceptualized in the Swedish curricula. However, it differs in that it is described as being one of five basic skills and hence on par with literacy and numeracy which is not the case in the Swedish curricula. Compared to how digital skills are conceptualized in earlier versions of the curricula, there is a shift from a focus on tools to a focus on social practices in digital environments. Relating to Street's models of literacy, this shift indicates a shift of models from the autonomous model towards the ideological model.

4. Conclusion and Discussion

Different terms are used in the national curricula of the Nordic countries when addressing how compulsory education can prepare students for living and working in a digitalized society. In Finland, Digital Competence is used in combination with Multiliteracies, while the Norwegian curriculum uses digital skills (*ferdigheter*) and IT and Media are used in Denmark. Digital competence is used consistently only in the Swedish curricula. However, apart from in this case, the term competence is not used elsewhere in the Swedish curricula, whereas both the Danish and the Norwegian curricula use competence when describing the goals that students need to achieve in different subjects. In all four countries, the area of knowledge that is described as connecting to these terms is supposed to be integrated into school subjects. Since this analysis has not taken into account the syllabi for different subjects, conclusions cannot be drawn on how, or to which extent, this is done.

In Denmark, IT and Media is regarded as an interdisciplinary theme, and in Finland, Multiliteracies and Digital Competence are regarded as complementary to school subjects. Norway instead sees digital skills as a basic skill on a par with reading and writing. The status of digital competence in the Swedish curricula is not as clearly defined as in the other countries, but recent revisions are supposed to support the development of students' digital competence and revisions are made both in the general part of the curriculum and in the syllabi of some subjects.

The Finnish curriculum is the only one that specifically refers to literacy, although to multiliteracies rather than digital literacies. Critical literacy is also briefly mentioned in the explanation of Multiliteracies. Diversity and critical aspects in relation to meaning-making are connected to Multiliteracies in the Finnish curriculum while handling of technology is a part of Digital Competence. Similarly, in the Danish curriculum, IT mainly concerns technological aspects, while Media focuses on communication in different environments.

Communication and the handling of information form part of the terms used in all curricula and connects

to aspects of literacy as a social practice. How to communicate and handle information in different digital environments, as well as multimodal aspects of texts, are described as being part of what students should learn throughout their education. Aspects of critical digital literacy can be found when broader social, political, economic, and technical issues are included in the conceptualization of the terms. Moreover, the conceptualizations incorporate being critical to the effects of digitalization in society, thereby breaking with common definitions of competence that connect it to effective functioning in different environments (Le Deist & Winterton, 2005). The incorporation of broader societal issues as well critical abilities in the terms used in curricula to describe what young people of the Nordic countries should learn during their compulsory education can be seen as a connection to *bildung* and indicates a certain Nordic interpretation of how digital literacy and competence are conceptualized.

Comparing curricula from different countries is challenging since the way they are written and organized differ and while I have some knowledge of historical aspects in the Swedish context, this knowledge is more limited within the other contexts. The scope of this article does not allow for an in-depth analysis of all four curricula, hence this is an area where further research is needed. Analysing and comparing syllabi for different subjects and comparing Nordic curricula to curricula in other parts of the world, are other interesting areas that need to be investigated further.

Summing up, the terms used in connection to students' digital literacy or competence, are in the Nordic curricula conceptualized in a broad sense where societal issues and a critical approach are emphasized. In that sense, Krumsvik's (2008) statement that digital competence takes on a particular meaning in Nordic countries, influenced by the notion of *bildung*, appears to be detectable within the curricula of all countries. Since digital *bildung* emphasizes broader societal issues and critical aspects it involves much more than the competent use of digital tools. Though competence or literacy as a technical skill is mentioned in the curricula, societal issues and the need for critical thinking is accentuated. Moreover, a shift appears to be taking place where students' production, rather than perception, is emphasized (Elf et al., 2018) and where digital literacy or competence as a technical skill is taken over by conceptualizations that stress the importance of being aware of both the opportunities and the risks present in a digitalized society, in order to become a responsible citizen.

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Conflict of Interests

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